

	A. thaliana	MARCKS repeat
Human gene signature		
Human secreted extracellular matrix protein		
A. thaliana gene 1		
CDNA encoding a m		
Allosteric ERK kinase		
MEKK3 protein codi		
Murine MEKK3 cohiln		
Murine MEKK3 nucle		
Oligonucleotide D1		
Oligonucleotide D2		
Oligonucleotide D3		
Oligonucleotide D4		
Oligonucleotide D5		
Oligonucleotide D6		
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XX MPI: 1999-571843/48.  
 DR P-PSDB: AAY42107.  
 XX  
 PT New human MEKK polynucleotides and polypeptides, used for regulating  
 PT signal transduction in cells -  
 XX  
 PS Example 1; Fig 3; 159pp; English.  
 XX  
 CC The present sequence encodes murine mitogen-activated protein kinase/  
 CC extracellular response kinase (MAPK/ERK) kinase kinase (MEKK).  
 CC Specifically designated MEKK1. The MEKK proteins are used to modulate  
 CC and regulate signal transduction in cells, as well as for regulation of  
 CC gene transcription in a cell encoding MEKK, where the cell is involved  
 CC in inflammation, regulation of cellular proliferation and  
 CC differentiation, regulation of development, regulation of cell death or  
 CC regulation of inflammation. They are also used to prepare antibodies.  
 CC MEKK polynucleotides can be used to produce the protein recombinantly  
 CC and as a source of probes and primers.  
 CC  
 XX Sequence 5253 BP; 1299 A; 1403 C; 1433 G; 1118 T; 0 other;  
 SQ

Query Match 100.0%; Score 5253; DB 20; Length 5253;  
 Best Local Similarity 100.0%; Pred. No. 0;  
 Matches 5253; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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 DB 1 gccgcgagagaaatgctgagcgagcgagcgatcgctctgctcgagatcccg 60  
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ID AAx80911 standard; cDNA; 5253 BP.
XX
AC AAx80911;
XX
DT 03-NOV-1999 (first entry)
XX
DE Murine MEK1 cDNA.
XX
KW Murine MEK1 cDNA; Mitogen ERK Kinase 1 protein; MEK1; protease;
KW extracellular signal regulated kinase; ERK; signal transduction pathway;
KW regulation; apoptosis; protein kinase; cleavage; caspase; antibody;
KW kinase fragment; mutant MEK1 protein; NH2-terminal fragment; detection;
KW immunoreactive; diagnostic; therapeutic assay; reagent; disorder;
KW aberrant expression; activation; MEK1 gene product; DNA probe; primer;
KW selectively hydrolise; ss.
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XX
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FT FT /tag= c
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FT FT /tag= d
FT FT /note= "Active fragment that mediates apoptosis"

WO9941385-A1.
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PD 12-FEB-1999; 99WO-US02974.
PR 13-FEB-1998; 98US-0023130.
PX (CADU-) CADUS PHARM CORP.
PY Johnson GL;
PI WPI; 1999-508649/42.
DR P-PSDB; AAY26234.
DR
XX
XX A new mammalian serine-threonine protein kinase for treating
XX disorder characterized by aberration of the enzyme gene
XX
XX Claim 1a; Page 113-119; 149pp; English.
XX
XX The present sequence is an isolated murine MEK1 cDNA. It encodes
XX Mitogen ERK kinase kinase 1 (MEK1) protein, which functions to
XX integrate proteases and signal transduction pathways involved in the
XX regulation of apoptosis. It is a 196 kDa protein kinase, which upon
XX cleavage at Asp 871/874 by caspase generates a 91 kDa kinase fragment

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 XX MEK1: MEK2: MEK3: mitogen-activated protein kinase; MAPK; ERK;  
 KW extracellular regulated kinase; signal transduction; regulation;  
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 PI Johnson GL.  
 XX  
 DR WPI: 1999-571843/48.  
 DR P-PSDB: AAV42104.  
 XX  
 PT New human MEK polynucleotides and polypeptides, used for regulating  
 PT signal transduction in cells -  
 PS Claim 2: Fig 1; 159pp; English.  
 PS  
 XX  
 CC The present sequence encodes human mitogen-activated protein kinase/  
 CC extracellular response kinase (MAPK/ERK) kinase kinase (MEKK).  
 CC Specifically designated MEKK1. The MEKK proteins are used to modulate  
 CC and regulate signal transduction in cells, as well as for regulation of  
 CC gene transcription in a cell encoding MEKK, where the cell is involved  
 CC in inflammation, regulation of cellular proliferation and  
 CC differentiation, regulation of development, regulation of cell death or  
 CC regulation of inflammation. They are also used to prepare antibodies.  
 CC MEK polynucleotides can be used to produce the protein recombinantly  
 CC and as a source of probes and primers.  
 XX  
 SQ Sequence 3911 BP; 1058 A; 973 C; 975 G; 905 T; 0 other;  
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KW Human MEK1 cDNA; Mitogen ERK Kinase 1 protein; MEK1; protease;
extracellular signal regulated kinase; ERK; signal transduction pathway;
regulation; apoptosis; protein kinase; cleavage; caspase; antibody;
kinase fragment; mutant MEK1 protein; NH2-terminal fragment; detection;
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PR 13-FEB-1998; 98US-0023130.  
 XX (CADU-) CADUS PHARM CORP.  
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 XX Johnson GL;  
 PI  
 XX WPI, 1999-508649/42.  
 DR P-PSDB; AAY26235.  
 XX  
 PT A new mammalian serine-threonine protein kinase for treating  
 disorder characterized by aberration of the enzyme gene  
 PS  
 XX Claim 5a; page 124-130; 149pp; English.  
 PS  
 CC The present sequence is an isolated human MEK1 cDNA. It encodes  
 CC Mitogen ERK kinase 1 (MEK1) protein, which functions to  
 CC integrate proteases and signal transduction pathways involved in the  
 CC regulation of apoptosis. It is a 196 kDa protein kinase, which upon  
 CC cleavage at Asp 681/684 by caspase generates a 91 kDa kinase fragment  
 CC that induces apoptosis and a 113 kDa NH2-terminal fragment. Mutant MEK1  
 CC proteins that are resistant to cleavage by caspase proteases and capable  
 CC of inhibiting apoptosis can be produced. MEK1 proteins and antibodies  
 CC immunoreactive with MEK1 proteins are used in diagnostic and therapeutic  
 CC assays and reagents for detecting and treating disorders involving  
 CC aberrant expression or activation of the MEK1 gene products. DNA probes  
 CC or primers that selectively hybridise to MEK1 cDNA, can be used for its  
 CC detection in samples.  
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Query Match 67.5%; Score 3547.6; DB 20; Length 3911;  
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Db 3058 gacataccaagcgaanaacagctctacagaagaagcgtgagtggtgtgaagaagccagcaga 3117  
OY 3703 taggcctcgagacattctctctgttaccgaagcagagatgtggagctggaacttaaa 3762  
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Db 3118 taggcctcgagacattctctctgttaccgaagcagagatgtggagctggaacttaaa 3177  
OY 3763 tggctgtgaanaagtgtagcgtctcagaanaacacatccctccagcagagagagtggtg 3822  
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QY	1026	gggcgcacagaaacgcgcgtgtgtggcgctgtgagcattctgtatccacctctgtgtgttcacgt	1085
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QY	1986	cttggatacaactctcttgcacacagcttgcgcgaagaagaatcaaaacttccagaagactccccg	2045
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QY	2046	ccaggttgtagacatactctcttgcagaagtgtgcagatgtgcacacagccgcgcagatctcagct	2105
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QY	2166	gaataacttaaaagctgcgtccatccggggtctggctggctcgaataagctcttaagttgcatc	2225
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QY	2286	gacaggtctgcgtctgcgaattctctcgtcgaattctatctctcatatgttaagtaacgtc	2345
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QY	2406	ttgcacatccatctgacaattcccaactcgaatgcgtctgcgaagcctctccgcgaagataatctg	2465
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QY	2466	agctctgcgaagatgcgtgcagccagatgcgcgcgtctgttctccaagctgcgtacaacagctc	2525
Db	2407	agctctgcgaagaatgcgtactacagtaaccocagctgttctccaacactgttagaagaatgct	2466
QY	2526	aatgcctc---tgcctccaccaactctcacagaagatgcgcgcgcgtctgaatgcatacgcg	2582
Db	2467	agtgcttccagtgcttctccactcactccacagaatgcgtctgcgcgttctgaatgcatacga	2526
QY	2583	gatgcgtagtaagaatctgcgcgagctgcataccagctgcgcgtgcgtgcgaagacactgtgagat	2642
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QY	2691	---tcccttgagccacaagctccatagagagaagaactgcgaagaagcctaagtgctacgaga	2747
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QY	3075	gaccgcgctctccagctcttcaactcagttaaaggccccaacccctccagtaacataacagg	3134
Db	3067	gataaactctcccaagctcttcaactcagttcaagaagccctgcgcctccagtaacataacagg	3126
QY	3135	ccaagccatccgaaccgcttccgcgcgcgcgtacagaagaactctggggagcgcaccaaaagt	3194

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 ID AA079325:  
 AC AA079325:  
 XX 28-JUN-1995 (first entry)  
 DT XX  
 DE Mammalian MEK kinase (MEK 1) cDNA.  
 XX MEK kinase; MEK 1; mitogen-activated protein kinase regulator;  
 KW MAPK; cell atrophy inhibition; Parkinson's; Alzheimer's; cancer;  
 KW autoimmune diseases; allergies; wound healing; oncogenes;  
 KW tumour agents; neurotropic growth factor; ds.  
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 OS Mus musculus.  
 XX  
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 FT CDS 486..2504  
 FT /\*tag= a  
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 PN W09424159-A.  
 XX  
 PD 27-OCT-1994.  
 XX  
 PF 15-APR-1994; 94WO-US04178.  
 XX  
 PR 15-APR-1993; 93US-0049254.  
 XX  
 PA (NAJE-) NAT JEWISH CENT IMMUNOLOGY & RESPIRATORY.  
 XX  
 PI Johnson GL.  
 XX  
 DR WPI: 1994-357747/44.  
 DR P-PSDB: AAR6029.  
 XX  
 PT New MEK kinase protein and related antibodies and nucleic acid  
 PT regulator of mitogen activated protein kinase, useful  
 PT therapeutically to inhibit cell atrophy, to screen for oncogenes  
 PT etc.  
 XX  
 PS Claim 6; Page 8; 84pp; English.



QY 3912 tacaaccttcattgattgattgagtcgaggaatctgtgtgctcacccttgaataaac 3971  
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 DT 17-JUL-1998 (first entry)  
 XX  
 DE cDNA encoding a murine mitogen-activated protein kinase (MAPK).  
 XX  
 KW Mitogen-activated protein kinase kinase; MAPK; mouse;  
 KW extracellular signal-regulated kinase kinase; MEKK; regulation;  
 KW signal transduction; rat; independent arm; screening assay; treatment;  
 KW disorder; cancer; autoimmune disease; inflammation; allergy;  
 KW neuronal disease; Parkinson's disease; Alzheimer's disease; ds.  
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 OS Mus sp.  
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 FT 5'UTR 1..485  
 FT CDS /\*tag= a 486..2504  
 FT /\*tag= b 2502..3260  
 FT 3'UTR /\*tag= c  
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 XX US5753446-A.  
 XX  
 PD 19-MAY-1998.  
 XX  
 PE 06-JUN-1995; 95US-0472934.  
 XX  
 PR 15-APR-1993; 93US-0049254.  
 PR 14-OCT-1994; 94US-0323460.  
 PR 21-FEB-1995; 95US-0354516.  
 PR 12-MAY-1995; 95US-0440421.  
 XX  
 PA (NAE-) NAT JEWISH CENT IMMUNOLOGY & RESPIRATORY.  
 XX  
 PI Johnson GL;  
 XX  
 DR WPI; 1998-311395/27.  
 DR P-PSDB; AAW56157.  
 PT Screening assay for regulators of MEKK signal transduction - using  
 PT mammalian MEKK polypeptide  
 XX  
 PS Claim 6; Columns 29-34; 48pp; English.  
 XX  
 CC The present sequence encodes a murine mitogen-activated protein kinase  
 CC kinase (MAPK) (also known as extracellular signal-regulated kinase  
 CC kinase (MEKK)). The protein, which is serine/threonine kinase is capable

of regulating signal transduction in cells. It regulates the activity of elements of the raf-independent arm of MEK. A screening assay for compounds that regulate signal transduction by a MEK protein comprises contacting a reaction mixture containing a mammalian MEK polypeptide and a test compound and determining the effect of the test compound on an indicator of signal transduction by the MEK polypeptide in the reaction mixture. Compounds identified by the above assay can be used to prepare therapeutic compositions for treating disorders that are subject to regulation or cure by manipulating a signal transduction pathway in cells involved in the disorders, e.g. cancer, autoimmune diseases, inflammation, allergies, and neuronal diseases such as Parkinson's disease and Alzheimer's disease.

Sequence 3260 BP: 869 A; 837 C; 793 G; 761 T; 0 other:

Query Match 61.8%; Score 3245.8; DB 19; Length 3260;  
Best Local Similarity 99.9%; Pred. No. 0;  
Matches 3258; Conservative 0; Mismatches 2; Indels 1; Gaps 1;

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QY 2052 gtagacacatctcttgcagctgtgcagatgcacagccgacagagtcagcttcata 2111  
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Db 2940 tctgtgtgtttgtttcgtgacgacaaatgtagtataatcttattcttcttgatcaaa 2999

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Oy 5052 atttbaataacgcttactactgtgttatttccaagtttactactcagctgctctaga 5111
Db 3060 atttbaataacgcttactactgtgttatttccaagtttactactcagctgctctaga 3119
Oy 5112 ttttcttaccacaatttaactctccgaatgaattctcagctgtgtgtgactatgact 5171
Db 3120 ttttcttaccacaatttaactctccgaatgaattctcagctgtgtgtgactatgact 3179
Oy 5172 cctaagacttcagaggtcctaagggctaacctccattagacccttactatgtaagcaatg 5231
Db 3180 cctaagacttcagaggtcctaagggctaacctccattagacccttactatgtaagcaatg 3239
Oy 5232 ctacaaaaaaaaaaaaaaaaa 5252
Db 3240 ctacaaaaaaaaaaaaaaaaa 3260

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## RESULT 8

AAZ31877  
ID AAZ31877 standard; cDNA; 3260 BP.

AAZ31877;

24-JAN-2000 (first entry)

DE Mitogen ERK kinase kinase, MEK-1, coding sequence.

KW Mitogen ERK kinase kinase; MEK; MEK-1; neurological disorder; cancer;

KW extracellular signal-regulated kinase; inflammation; autoimmune disease;

KW allergic reaction; hormone related disease; therapy; ds.

OS Mus sp.

XX US5981265-A.

PN 09-NOV-1999.

PD 05-JUN-1995; 95US-0461146.

XX 15-APR-1993; 93US-0049254.

PR 12-MAY-1995; 95US-0440421.

PR 15-APR-1994; 94WO-US04178.

PR 14-OCT-1994; 94US-0323460.

PR 14-OCT-1994; 94WO-US11690.

PR 28-NOV-1994; 94US-0345516.

XX (NAME) NAT JEWISH CENT IMMUNOLOGY & RESPIRATORY.

PI Johnson GL;

XX WPI; 1999-633328/54.

DR P-PSDB; AAY43318.

XX Regulating mitogen extracellular signal-regulated kinase protein activity, useful for the treatment of cancer, neurological diseases and autoimmune diseases

PS. Claim 1; Column 49-54; 94pp; English.

CC This sequence encodes the mitogen ERK (extracellular signal-regulated kinase) kinase kinase-1 (MEK-1). The invention relates to a method of regulating MEK protein activity in a fungal cell by transforming or

CC transfecting the cell with a nucleic acid encoding an MEK protein. The MEK protein is useful for treating cancer, inflammation, neurological disorders, autoimmune diseases, allergic reactions, and hormone related diseases.

CC Sequence 3260 BP; 869 A; 837 C; 793 G; 761 T; 0 other;





OY	4092	agcaacgctcagaagcgtctgaagatctgcacactcttgagagctctgcgcacagtttgatcaaaa	4151
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Db	2160	ggaacccgctgctcagagagagcttccacagagacagttactctgtagagagaaactgcatctacgagccct	2219
OY	4212	gaagctcctaagagagtcacagcagtactgtagagagctgtgatactgagagtgctgtctgcgcgc	4271
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OY	4272	attatagaaatgctctgtgcgaacacacaccttgaaatgtgacagaaacacotccaatcatctc	4331
Db	2280	attatagaaatgctctgtgcgaacacacaccttgaaatgtgacagaaacacotccaatcatctc	2339
OY	4332	gacctgaatttaagattgtctagcgcaactactgtcacccgtccatcccgctcaacactgtcc	4391
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OY	5172	cctaagacttccagggcttaagggctctaactctatttagcaacttactactatgataagcaaatg	5231

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Dd	3240	ctacaaaaaaaaaaaaaaaaaaa	3260

RESULT	9
AAV45619	
ID	AAV45619 standard; DNA; 3260 BP

AC AAV45619

DT 04-MAR-1999 (first entry)

DE MEK1 protein coding sequence:

KW Mitogen activated protein kinase kinase kinase; MEKK; MAPK; MEK; cancer therapy; inflammation; allergy

neuronal disorder; ss. KW

Mus sp OS

FH	Key	Location/Qualifiers
233		486 3501

LE

PN US5854043-A.

PD 29-DEC-1998  
XY

PF 14-OCT-1994  
XX

PR 14-OCT-1994  
PR 15-APR-1993

XX 15-APR-1994

PA (NAJE-) NATL  
XX

PL JOHNSON GE,  
XX

DR WFL; 1999-01  
DR P-PSDB; AAW

AA	PT	Mitogen act.
AA	PT	Mitogen act.

PI	used for re
PT	modulate ap

PL 111-251-100

Example 1,  
XX

CC are mitogen  
CC are sequen

CC MEANS PROSP  
CC transductio

protein. Pa

CC are used to

wound healing

effect on a

XX

•

Query match

Matches 3258;

Query match	Score	DB	Length
61.8%	3245.8	20	3260

Matches	3258;	Conservative	0;	Mismatches	2;	Indels	1;	Gaps	1.
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10

1

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Db 1800 aacacatctctccgaagacagagagagtggtgtgaagcgtltgaaggaagagataccggaatga 1859  
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Db 1920 tacaacctctcatgtgaagtgaatggcgcgagagatctgtgtgtgcacactcttgagtaaaac 1979  
QY 3972 ggaagcttcaagagatcaagtcgttcaactaactgaagcagttactgcgtgtgccttcc 4031  
Db 1980 ggaagcttcaagagatcaagtcgttcaactaactgaagcagttactgcgtgtgccttcc 2039  
QY 4032 tatctccaagaaacacagatcaatccaagagacgtccaagagtcgaacctgtactatgac 4091  
Db 2040 tatctccaagaaacacagatcaatccaagagacgtccaagagtcgaacctgtactatgac 2099  
QY 4092 agcacgcgtcgaagagcttgaaatgcaagacttggagctgtgcacaggtgtgcatacaaa 4151  
Db 2100 agcacgcgtcgaagagcttgaaatgcaagacttggagctgtgcacaggtgtgcatacaaa 2159  
QY 4152 ggaacgcgtgcagagaggttccagagacagttactgtggagacaattgcattcagtcgcct 4211

RESULT 10  
AAA49222 standard; cDNA: 3260 BP.  
ID AAA49222 standard; cDNA: 3260 BP.  
XX AC AAA49222;  
XX XX 19-DEC-2000 (first entry)  
XX DE Murine MEK1 coding sequence.  
XX OS Mouse; MEK1; mitogen ERK kinase kinase; signal transduction pathway;  
XX FH apoptosis; cancer; autoimmune disease; inflammatory response;  
XX FT allergic response; neuronal disorder; Parkinson's disease;  
XX FT Alzheimer's disease; ss.  
OS Mus sp.  
XX Key Location/Qualifiers  
XX FH 5'UTR 1..485  
XX FT CDS /tag= a  
XX FT 486...2504  
XX FT /product= b  
XX FT 3'UTR /product= "MEK1"  
XX FT 2505...3260  
XX FT /\*tag= c  
XX PN US6074861-A.  
XX PD 13-JUN-2000.  
XX PF 05-JUN-1995; 95US-0461145.  
PR 15-APR-1993; 93US-0049254.  
PR 12-MAY-1995; 95US-0440421.  
PR 15-APR-1994; 94MO-US04178.  
PR 14-OCT-1994; 94US-0323460.  
PR 14-OCT-1994; 94MO-US11690.  
PR 21-FEB-1995; 95US-0354516.  
PA (NAJE-) NAT JEWISH CENT IMMUNOLOGY & RESPIRATORY.  
XX PI Johnson GL;  
XX DR WPI: 2000-411281/35.  
XX DR P-SDB; AAB01216.  
XX PT Novel mitogen extracellular signal-regulated kinase kinase (MEK1)  
PT protein useful for treating cancer, inflammation, autoimmune diseases,  
PT neurological disorders and hormone related disease in animals  
PS Disclosure: Column 47-54; 92pp; English.

The present sequence is the murine mitogen ERK kinase kinase (MEK1) coding sequence. MEK1 is involved in a signal transduction pathway which can ultimately lead to apoptosis. The proteins regulated by MEK1 identified by searching a mouse liver cDNA library for sequences similar to the Ste11 and Bcr1 genes from yeast (these are MEK homologues). The gene and protein can be used to treat diseases such as cancer, autoimmune disease, inflammatory responses, allergic responses and neuronal disorders including Parkinson's disease and Alzheimer's disease.

Sequence 3260 BP; 869 A; 837 C; 793 G; 761 T; 0 other;

Query Match Best Local Similarity 61.8%; Score 3245.8; DB 21; Length 3260; Matches 3258; Conservative 0; Mismatches 2; Indels 1; Gaps 1

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Db	61	gtagacatactctgtcaaggtgtcagat -ccaaacagccagagatgaagttccata	119
QY	2112	tctacaagctgtgaaactctgcaagagccaaagcagagagagctgagcggttgagagaaata	2171
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QY	2172	cttaaaagcttgggttccaatcgagggttgggtgtcgatccatgaccttaagttatcccttga	2231
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QY	2232	aaccagaagctgaatcaaaacacacgcaagaacgtcggtgtcgctctgtcttaagaag	2291
Db	240	aaccagaagctgaatcaaaacacacgcaagaacgtcggtgtcgctctgtcttaagaag	299
QY	2292	tgtcgcttggaaattccctgtgaattctatccctcatatgtcagtaactgtatctcaaa	2351
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QY	2352	gctgagcctgttgaatacagtagacaagaagctgtctccctcttaaccttgccttgcaa	2411
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QY	2592	gaaatttgcgaaggtatcccaagctgtgtgtgtgagagacagctgtgagatcatcaagaacac	2651
Db	600	gaaatttgcgaaggtatcccaagctgtgtgtgtgagagacagctgtgagatcatcaagaacac	659
QY	2652	ttacagagccgttggcccacacagctgtctagaaaacagctccctttagcacacagttccat	2711
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Db	720	agaagagaaaactgtgaaaagactaagtgtctacgagagactgtatgtccaggtcggagacatt	779
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QY	2892	tctcatgtctcaattaatgttctccagacacatcagcccttgttcccttgcctcgtctgtc	2951
Db	900	tctcatgtctcaattaatgttctccagacacatcagcccttgttcccttgcctcgtctgtc	959
QY	2952	cgaagtatttctaaagcagaccccgagattgttcccttggaaaaataccttcogacatt	3011
Db	960	cgaagtatttctaaagcagaccccgagattgttcccttggaaaaataccttcogacatt	1019
QY	3012	ccttcagacacagcgcaagttctctctacacatccagaggaactgtcttgaaccccgagac	3071
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QY	3072	tcagacacagctctccacagttctctacacatcagaagacccacacccctcagtaacatacac	3131
Db	1080	tcagacacagctctccacagttctctacacatcagaagacccacacccctcagtaacatacac	1139

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QY	3252	ggcaacagtgagcaagccgttcataccagcgagacaggttctacgcccgttggagagac	3311
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Db	1320	aagttgcaagtttagatgttgacaacagagctcaactcccaagctcagagacattcttgaaga	1379
QY	3372	tccatgctctcaagtgacacgacatcactttcaagttccgaaagtcgcttccctctccg	3431
Db	1380	tccatgctctcaagtgacacgacatcactttcaagttccgaaagtcgcttccctctccg	1439
QY	3432	gaaaagccgnaaatagagacacactcaaaagacgagctcaatcaataaataaagtgcaaa	3491
Db	1440	gaaaagccgnaaatagagacacactcaaaagacgagctcaatcaataaataaagtgcaaa	1499
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 QY 4272 attatagaatagctgtgtgcaaaacacacttggaaatgcaaaaacacacacacacacac 4331  
 DB 2280 attatagaatagctgtgtgcaaaacacacttggaaatgcaaaaacacacacacacacac 2339  
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RESULT 11  
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 ID AAT05570 standard; CDNA: 3260 BP.  
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 AC AAT05570;  
 XX  
 DT 12-MAR-1996 (first entry)  
 XX  
 DE MEK1 CDNA.  
 XX  
 KW MEK1; mitogen ERK kinase kinase; signal transduction; homeostasis;  
 KW cancer; inflammation; neurological disorder; autoimmune disease;  
 KW allergy; hormone-related disease; gene therapy; ss.  
 OS Mus sp.  
 XX  
 FH key Location/Qualifiers  
 FT CDS 486..2504  
 FT /\*tag- a  
 MO528421-A1.  
 PN 26-OCT-1995.  
 PD 14-OCT-1994; 94WO-US11690.  
 PE 15-APR-1994; 94WO-US04178.  
 PR (NAE-) NAT JEWISH CENT IMMUNOLOGY & RESPIRATORY.  
 PA Johnson GL;  
 PI WPI: 1995-373762/48.  
 DR P-PSDB: AAR7544.  
 DR  
 XX  
 PT New signal-regulated kinase proteins and nucleic acids - used for  
 PT regulating cell responsiveness for treating e.g. tumours,  
 PT auto-immune disease, inflammation or neuronal disorders.  
 PS Claim 3; Page 26-28; 147pp: English.  
 PS  
 CC CDNA (AAT05570) coding for mitogen ERK kinase MEK1 (AAR7544)  
 CC was isolated from a mouse brain CDNA library using a probe  
 CC generated from NIH3T3 RNA using primers based on the yeast Ste11 and  
 CC By2 genes. The CDNA can be expressed in a host, esp. mammalian,  
 CC cell to produce recombinant MEK1 or can be manipulated for use in the  
 CC therapy of diseases involving disorders of signal transduction.  
 CC  
 XX  
 SQ Sequence 3260 BP; 869 A; 838 C; 792 G; 761 T; 0 other;

Query Match 61.8%; Score 3244.2; DB 16; Length 3260;  
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QY 3372 tccatgtccttcaagtgcacacgaacgaatccttcaagtccgaagtgcgcctctctccgc 3431  
Db 1380 tccatgtccttcaagtgcacacgaacgaatccttcaagtccgaagtgcgcctctctccgc 1439  
QY 3432 gaaagggccgaaatctgaac 3491  
Db 1440 gaaagggccgaaatctgaac 1499  
QY 3492 gaaagatgtgaagctgaaagagagagagctttagcgatcccatgtgcgaatgtcagcgctc 3551  
Db 1500 gaaagatgtgaagctgaaagagagagagctttagcgatcccatgtgcgaatgtcagcgctc 1559  
QY 3552 caggatgtccctcccatctccctcagctgcaagctggaagaaatgtgaatcttctacac 3611  
Db 1560 caggatgtccctcccatctccctcagctgcaagctggaagaaatgtgaatcttctacac 1619  
QY 3612 attcagcaagac 3671  
Db 1620 attcagcaagac 1679  
QY 3672 gaagacgtgtgagtggtggaagccagacagatagccttcggaacatcttctctgttac 3731  
Db 1680 gaagacgtgtgagtggtggaagccagacagatagccttcggaacatcttctctgttac 1739  
QY 3732 caagcaagatgtgtggaatgtggaatgtggaatgtggaatgtggaatgtggaatgtggaat 3791  
Db 1740 caagcaagatgtgtggaatgtggaatgtggaatgtggaatgtggaatgtggaatgtggaat 1799  
QY 3792 aacacatctccgaagacagagagagtggtggaagcttgaagaaagagatcccgatgat 3851  
Db 1800 aacacatctccgaagacagagagagtggtggaagcttgaagaaagagatcccgatgat 1859  
QY 3852 ggttcaacttaac 3911  
Db 1860 ggttcaacttaac 1919  
QY 3912 taacacatcttcatgtgagtggaatgtggaagagatcgtgtggaacacacacacacacacacac 3971  
Db 1920 taacacatcttcatgtgagtggaatgtggaagagatcgtgtggaacacacacacacacacacac 1979  
QY 3972 ggaagcttcaagagatcagtcgcatctaaactaaactaaactaaactaaactaaactaaact 4031  
Db 1980 ggaagcttcaagagatcagtcgcatctaaactaaactaaactaaactaaactaaactaaact 2039  
QY 4032 tatctcaagaagaacagatctatcaagaagacgttcaagaagtgccaactgtctatgac 4091  
Db 2040 tatctcaagaagaacagatctatcaagaagacgttcaagaagtgccaactgtctatgac 2099  
QY 4092 agcaacgggtcagaagcttgaatgtggaatgtggaatgtggaatgtggaatgtggaatgtggaat 4151  
Db 2100 agcaacgggtcagaagcttgaatgtggaatgtggaatgtggaatgtggaatgtggaatgtggaat 2159  
QY 4152 ggaacccgtgtcagaagagttccagaagacagttactgtggaagacatgtcatctgagccct 4211  
Db 2160 ggaacccgtgtcagaagagttccagaagacagttactgtggaagacatgtcatctgagccct 2219  
QY 4212 gaagtccttaagaaggtcagacagatgtatgtagagctgtatgtatgtatgtatgtatgtatgt 4271  
Db 2220 gaagtccttaagaaggtcagacagatgtatgtagagctgtatgtatgtatgtatgtatgtatgt 2279  
QY 4272 attatagaatgtgctgtcacaac 4331  
Db 2280 attatagaatgtgctgtcacaac 2339  
QY 4332 gcttgatatttaagaattgttagcgcaactactgtcaacgcttccatcccgatcaacactgttcc 4391  
Db 2340 gcttgatatttaagaattgttagcgcaactactgtcaacgcttccatcccgatcaacactgttcc 2399  
QY 4392 ccgggtgtcgcggaagtggtgcgtgtgcgtgtctagaactcaagctcgaagacggcgtccgc 4451  
Db 2400 ccgggtgtcgcggaagtggtgcgtgtgcgtgtctagaactcaagctcgaagacggcgtccgc 2459



CC double-stranded DNA) for its complementary strand or the corresp.  
CC given in AAT19001-726637 and which is able to hybridise to part of  
CC human genomic DNA, cDNA or mRNA is claimed. The GS (Gene Signature)  
CC sequences were obtained from 3'-directed cDNA libraries prepared  
CC from various human tissues; synthesis of cDNA was initiated from the  
CC 3'-end of mRNA by using poly(T) as the sole primer. Since the 3'-  
CC untranslated sequence is unique to a particular mRNA species, almost  
CC all the 3'-oriented cDNAs hybridise with specific mRNAs. Each library  
CC is constructed so as to reflect accurately the relative abundance of  
CC different mRNAs in the particular tissue from which it was derived.  
CC The appearance frequency of a given GS in a cDNA library can be  
CC determined (esp. using primers and probes derived from the GS  
CC sequences) as a means of diagnosing abnormal cell function or for  
CC recognising different cell types.  
XX  
S0 Sequence 255 BP; 69 A; 45 C; 43 G; 96 T; 2 other;

RESULT	13
AAA44215/c	
ID	AAA44215 standard; CDNA; 223 bp
XX	
AC	AAA44215;
XX	
DT	21-AUG-2000 (first entry)

XX Human secreted expressed sequence tag SEQ ID NO:790.  
 XX  
 DE Human, mouse; chicken; rat; secreted expressed sequence tag; SEST;  
 XX expressed sequence tag; EST; probe: chemotactic; proliferative;  
 KW immunomodulatory; haemtopoietic; chemokine; analgesic; haemostatic;  
 KW thrombolytic; antiinflammatory; cytostatic; antibacterial; antifungal;  
 KW antiviral; antidiabetic; antisthmatic; vulnary; antiparkinsonian;  
 KW antitumor; osteopathic; neuroprotective; nootropic; antipsoriatic;  
 KW cerebroprotective; anticoagulant; antidepressant; gene therapy;  
 KW vaccine; autoimmune disorder; multiple sclerosis; allergic condition;  
 KW insulin dependent diabetes; asthma; myeloid cell deficiency; ulcer;  
 KW lymphoid cell deficiency; burn; osteoporosis; osteoarthritis;  
 KW central nervous system disorder; Alzheimer's disease; stroke;  
 KW Parkinson's disease; Huntington's disease; coagulation disorder;  
 KW haemophilia; thrombosis; inflammatory disorder; Crohn's disease;  
 KW tumour; infection; depression; psoriasis; ss.  
 XX  
 OS Homo sapiens.  
 XX  
 PN WO200021991-A1.  
 XX  
 PD 20-APR-2000.  
 XX  
 PF 15-OCT-1999; 99WO-US24206.  
 XX  
 PR 15-OCT-1998; 98US-0104436.  
 XX  
 PA (GENMY ) GENETICS INST INC.  
 XX  
 PI Jacobs K, McCoy JM, LaValle ER, Collins-Racle LA, Evans C;  
 PI Merberg D, Treacy M, Bowman MR;  
 XX  
 DR WPI; 2000-317938/27.  
 XX  
 PT Isolated polynucleotides, and encoded proteins, comprising secreted  
 PT expressed sequence tags (SESTs), useful for treating various disorders  
 PT such as autoimmune, infectious, and central nervous system disorders -  
 XX  
 PS  
 XX  
 Claim 1; Page 409; 803pp; English.  
 CC AAA43426 to AAA5925 represent specifically claimed secreted expressed  
 CC sequence tags (SESTs), isolated from human, mouse, chicken and rat  
 CC tissue sources. The SESTs can have a range of activities depending on  
 CC the tissues they were isolated from. The activities include:  
 CC chemotactic; proliferative; immunomodulatory; haematopoietic;  
 CC chemokine; analgesic; haemostatic; thrombolytic; antiinflammatory;  
 CC cytostatic; antibacterial; antifungal; antiviral; antidiabetic;  
 CC antisthmatic; vulnary; antitumor; osteopathic; neuroprotective;  
 CC nootropic; antiparkinsonian; antipsoriatic; cerebroprotective;  
 CC anticoagulant; and antidepressant. The SESTs can be used for gene  
 CC therapy and in vaccines. The SESTs are useful as probes for the  
 CC identification and isolation of full-length cDNAs and genomic DNA  
 CC molecules which correspond to the SESTs. Proteins encoded by the SESTs  
 CC are useful in assays for determining biological activity and raising  
 CC antibodies. They may be useful for treatment of autoimmune disorders  
 CC (multiple sclerosis, insulin dependent diabetes), allergic conditions  
 CC (asthma), myeloid or lymphoid cell deficiencies, wounds, burns, ulcers,  
 CC osteoporosis, osteoarthritis, central nervous system disorders  
 CC (Alzheimer's, Parkinson's, Huntington's disease, stroke), coagulation  
 CC disorders (haemophilia, thrombosis), inflammatory disorders (Crohn's  
 CC disease), tumours, bacterial, fungal or viral infections, depression and  
 CC psoriasis. AAA45926 to AAA5931 represent linker variants which are given  
 CC in the exemplification of the present invention.  
 XX  
 SO Sequence 223 BP; 53 A; 50 C; 47 G; 73 T; 0 other;  
 XX  
 Query Match 2.5%; Score 132.2; DB 21; Length 223;  
 Best Local Similarity 80.3%; Pred. No. 1,6e-21;  
 Matches 155; Conservative 0; Mismatches 38; Indels 0; Gaps 0;

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Db      221 CGAGTAATATCAAGTAATAACGAGGAGATCCCTCAAAAAAATAGCATGACACTTGTATCGAACCA 162
Oy      3217 gtgtctccaaaggtgtgtacgacacagcttggcggcgcgcgcaacagltgccaacgcgcltacac 3276
Db      161 GAGATTCCAAATGTGATGATACAGACTTTGGCTGTAGACGACAAATAGTAGTAGTAATGCTGTTATAC 102
Oy      3277 ccagcagcagagacagcagtgcttcacgcgcgtgtggaggacagltgcaggttagatgtgaacacg 3336
Db      101 CCAGTGAGAGAGAGACACTGTCTTACCCCGATGAGAGAGAAATGCAGATTAGATGTCAATACAG 42
Oy      3337 agctcaactccag 3349
Db      41 AGCTCAACTCCAG 29

RESULT 14
AAZ98321
ID      AAZ98321 standard; DNA; 1984 BP.
XX
XX      AAZ98321;
XX
XX      14-JUN-2000 (first entry)
XX
DE      A. thaliana gene involved in environmental stress tolerance.
RW      Environmental stress; plant; transgenic plant; anaerobic; flooding; cold;
KW      dehydration; drought; heat stress; salinity; osmotolerance; ds.
XX
OS      Arabidopsis thaliana.
XX
XX      WO200008187-A2.
XX
XX      17-FEB-2000.
XX
XX      04-AUG-1999; 99WO-EP05652.
XX
XX      04-AUG-1998; 98EP-0202634.
XX
XX      (VLAAS-) VLAAMS INTERNUNIVERSITAIR INST BIOTECHNOG.
PA
XX
PI      Lee JH, Verbruggen N;
XX
XX      WPI: 2000-205726/18;
DR      P-PSDB: AAY77941.
XX
XX      Isolation of polynucleic acids useful for producing transgenic plant by
PT      isolating genes involved in tolerance to environmental stress
XX
XX      Claim 4; Page 143-146; 312pp; English.
XX
XX      The invention relates to isolation of coding sequences and/or genes
CC      involved in tolerance to environmental stress in plants. The sequences
CC      (AAZ98305-298365) are useful for producing a transgenic plant having
CC      enhanced tolerance or resistance to environmental stress conditions such
CC      as anaerobic, flooding, cold, dehydration, drought, heat stress or
CC      salinity. This is useful for producing improved yield, growth,
CC      development and productivity under environmental stress conditions, and
CC      also provides growth of crops in areas where they cannot grow without
CC      the induced osmotolerance. Sequences AAZ98305-365 represent
CC      polynucleotide sequences from A. thaliana that are involved in
CC      environmental stress tolerance.
XX
XX      Sequence 1984 BP; 572 A; 415 C; 480 G; 517 T; 0 other;

Query Match      2.1%; Score 108; DB 21; Length 1984;
Best Local Similarity 49.3%; Pred. No. 1.9e-15;
Matches 409; Conservative 0; Mismatches 400; Indels 21; Gaps 4;

Oy      3683 gtggcgtgaagccgcgcagatagcgtctggagcattcttcctcgtttcaacagcacaaga 3742
Db      220 gtggagggagagggagattaatcgtgttggtgggtgttttggaaagatttcatgttgaaatgaa 279

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QY 3743 tctgggactggaacttaatgctgtgtaaaacagtgacgtcagaaacacatctc 3802
Db 280 cctgattccggcgagactcttctgcaattaaacagtttaactcgtccaaacagctgtc 339
QY 3803 cgaacgagagagagtg-----tgaaagcgttgagagaaagatccgaaatgaggttca 3856
Db 340 aaagagaaagactcaggttcacatccgaagacttgagaaagaaagtaaaccttcaagaa 339
QY 3857 cctcaacatccaacacatcccgatgctggtgggacagtgccgagaaagaaacacaa 3916
Db 400 tcttccacatccgaacacatcgtaataacttggtacgttaagagaggtgattcgtgaa 459
QY 3917 cctcttcatagtgatgagcgagagatcgtgtgctcacccttgaataaatacagagc 3976
Db 460 taatttgatgagttgttctcgtgtgatacaatacattcttctgtgagagatttgatc 519
QY 3977 ttcaagagagcagtcgtcaacttaactaacactgagcaacttactgctggtccttccatc 4036
Db 520 ttctccgagcctggtatattatgtacaaagcaacttctgctgggtcgtgaaatattc 579
QY 4037 ccacgagaaacagatcattacacagagcgtcaaggtgccaactgtcatttgacagac 4096
Db 580 tcacaaacatgagatcagatcagatataaggggcaaatatttgttcgatacaaa 639
QY 4097 cgtcagagagctgagatctgcaacttgagagctgctgcagagttggcataaaagagac 4156
Db 640 aggtt---gatacagatccagatcttctgcttccaaagagtgtagagctagctac 696
QY 4157 cgtgcaagagagatccagagagatctggtgagcaatgatactcaatggtcgtcaggt 4216
Db 697 tgaataatggtgcca-----aatcatgaaagggagcgccttatttgaggtcctcgaagt 750
QY 4217 cctaagaagtcagatgagtagagagctgtgagatgataagagtggtgtgctgcagcatat 4276
Db 751 catctccagactggtcagatagcttctcgtgataataatgaggtgtgtgtgctcagctg 810
QY 4277 agaaatggtctgtgcaaaacacacttggaatgcagaaacacacacatcgcctt 4336
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QY 4337 gatattgaagttgtacgcgaactaactgacgtccatccgcgcaacactgtcccgag 4396
Db 865 tgccttcattatgtgtaaaacaaagctccatcccaatccagaagaactcctcaccaga 924
QY 4397 tctgcgagagtggtcggtcgtctctagaactcagcctcagagaccggtcgtccag 4456
Db 925 ggtcaagagacttctaataatgacttaccacaaagaaacagcttgaagactccttgcaac 984
QY 4457 agagctgtgaaacatccgtctcgtaccacagtgtagtaattgttc 4506
Db 985 cgaatgtctcagacccgcttctgtaactgtgaaagcgccagaaactatc 1034

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## RESULT 15

AAZ51103 standard; cDNA: 2157 BP.

AAZ51103;

05-JUN-2000 (first entry)

A. thaliana MAP kinase kinase kinase, ANP3 encoding cDNA.

Stress tolerance: auxin; seed development; agronomic; physiological; mitogen-activated protein kinase kinase kinase; MAPKK; developmental;

Arabidopsis thaliana.

Key Location/Qualifiers  
 CDS 42..1997  
 FT /\*tag= a

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FT      /product= "A. thaliana ANP3"  

FT      /note= "Nucleotide sequence (231-1034 bp) encoding kinase  

FT      domain of MAPKK. ANP3 is specifically used in transgene  

FT      constructs"  

EN      WO20000974-A1.  

PD      24-FEB-2000.  

XX      10-AUG-1999; 99WO-US18150.  

XX      10-AUG-1998; 98US-0095938.  

XX      (GENE) GEN HOSPITAL CORP.  

XX      Sheen J, Chiu W, Kovtun Y;  

XX      WPI: 2000-224353/19.  

XX      P-PSDB: AAY70100.  

PT      Increasing stress resistance or tolerance in plants comprises  

PT      introducing a transgene comprising DNA encoding kinase domain of  

PT      mitogen activated protein kinase kinase kinase into the plant cells  

PS      Disclosure: Fig 14; 106pp; English.  

CC      The patent discloses a method for increasing stress tolerance, reducing  

CC      the action of auxin, altering seed development or increasing the yield  

CC      in plants by transforming them with a transgene comprising DNA encoding  

CC      kinase domain of a mitogen-activated protein kinase kinase kinase  

CC      (MAPKK). MAPKK may be derived from Arabidopsis thaliana or tobacco. This  

CC      method is also useful for genetically engineering plants to produce  

CC      altered agronomic, physiological or developmental changes. The present  

CC      sequence is a cDNA encoding A. thaliana ANP3 protein, which is a MAPKK.  

SQ      Sequence 2157 BP; 618 A; 438 C; 505 G; 596 T; 0 other;  

Query Match 2.1%; Score 108; DB 21; Length 2157;  

Best Local Similarity 49.3%; Pred. No 2e-15;  

Matches 409; Conservative 0; Mismatches 400; Indels 21; Gaps 4;  

QY 3683 gtggtgaaagccagcagatagagctcggagacatttctcgttaccagacagga 3742  

Db 242 gtgagagaaagggaaatcgcgttgcgttcttgagaggttaaatggaatgaa 301  

QY 3743 tctgggactggaacttaatgctgtgaaacaggtgagatgacatcaacatcctc 3802  

Db 302 cctgattccggtcagacttcttcaatcaaacaggttcaatcgtcccaagcagtgctc 361  

QY 3803 cgaacgagagaggtg-----tgaaagcgttgagaaagagatccgagatgagtc 3856  

Db 362 aaaggaagaaagatcaggttccatccgagagcttgagagaaagtaaacacttcaagaa 421  

QY 3857 cctcaacatccaacacatccgagatgctgggggacagtcgtgagaaagaaacaa 3916  

Db 422 tcttccacatccgaacatcgttagaacttggtactctgtaagagagatgattcgtgaa 481  

QY 3917 cctctcattggtgagatggtcgagagatctgtgtcaacccttgaaatgaatacagagc 3976  

Db 482 taatttgatgagttgttccctggtgatacaatacattcttggagaaagtttgatc 541  

QY 3977 ttcaagagagtcgttcaactaaactaagagagatgagttggtcgttccatct 4036  

Db 542 taatttgatgagttgttccctggtgatacaatacattcttggagaaagtttgatc 601  

QY 4037 ccagagaaacagatcattacacagagcgttcaaaaggtgccaacctgtcattcagagac 4096  

Db 602 tcacaaacatgagatcagatcagatataaggggcaaatatttgttcgatacaaa 661  

QY 4097 cgtcagagagctggaatctgagagctggtcgtccagagttggatcacaagagac 4156  

Db 662 aggtt---gatacagactcagagatttctgtcttccaaagaggttgaagctagctac 718

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Oy	4157	cggcgacgaggaagttccaaaggacaaagttaactgagggaacaattgattccatgagcgctgagtc	4216
Db	719	tgtaaatgtgtcca-----aaactatagaaggaggagcgcttaatttgagtgctctgaagt	772
Oy	4217	cctaagaaggttcagagatgatgtatgtagggcgctgattgatgatgagttgttcgcgcattat	4276
Db	773	cattctccgaactgtgtcatatgactctctctgcctgatataatgaaagtgtcttgggtgactgtgat	832
Oy	4277	agaaatgtgctgtgtccaaaacacccttggaaatgcagaaaacctccaatctacctgcctt	4336
Db	833	tgagatgtgctacggggagagcctcccgaggcg-----agcagatcaagcagtttgcgc	886
Oy	4337	gatatattaagattgtctagcgcacactatctgcacgcgttccatcccgltacacactgtccggg	4396
Db	887	tgctcttcataattgttgaacaaagaactcatctctccaattccagaagaagcctctacaga	946
Oy	4397	ctctgcgagacgttggcgctgtgctgcgtcttaagacttcaagctcctgaagcggcctcgtccag	4456
Db	947	ggctaaagacttcttaattgaatgtcttcaacaaagaagcaagaactgtgagctctctgcaac	1006
Oy	4457	agagctcgtgaacatccgctctctccgtaccacgctgtgatttaattgttc	4506
Db	1007	cgaattgtcttcagcaaccgcttcttaactctgtaaaagcgcagaaccttacc	1056

Search completed: April 11, 2002, 09:54:20  
Job time: 17771 sec

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1 MetAlaAlaAlaAlaGlyAspArgAlaSerSerSerGlyPheProGlyAl 17
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15 ATGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG 64
17 aAlaAlaAlaSerProGluAlaGlyGlyGlyGlyGlyGlyAlaL 34
  |||
65 CCGGGCGGGAGTCCCGAGCGGGGGGGGGGGGGGGAGAGAGAGAGCTC 114
34 euGlnGlySerGlyAlaProAlaAlaGlyAlaGlyLeuLeuArgGlu 50
  |||
115 TCCAGGAGAGCGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG 164
51 ProGlySerAlaGlyArgGluArgAlaAspTrpArgArgArgHisVal 67
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165 CCGGACAGCGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG 214
67 GlysValArgSerValGluLeuAspGlnLeuProGluGlnProLeuPhe 84
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215 CAAAGTCGGAGTGTGAGAGCTGGACCACTGCGGAGCAGCGGCTTCC 264
84 euAlaAlaAlaSerProProGlySerProSerThrSerProSerProGluPro 100
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265 TCGCGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG 314
101 AlaAspAlaAlaAlaGlyAlaSerArgPheGlnProAlaAlaGlyPro 117
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151 AlaAlaAlaAlaProSerGlyArgGluMetGluAsnLysGlnThrLeuLys 167
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465 GCACGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG 514
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565 TCAAGGGAGCCTGTATGCGGGCTGGAAGCAGCAGGTGGTGGAGAGAGG 614
201 AsnArgArgGlyProValValValLysProLLeuLysGlyAspGlu 217
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615 AACAGGAGAGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG 664
217 ySerGluValAsnAsnLeuAlaAlaGluProGlnGluGluAlaG 234
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665 ATCTGAAGTAATTAATTGGCAGCTGAGCCCAAGGAGAGGGCCAGAGCAG 714
234 LysSerAlaAlaProAlaProLysGlyArgArgSerProSerProGlySer 250
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715 GTTCGGGTGACCAAGCCCAAGGGCGGAGAGAGCCCATCTCTGGGAGC 764
251 SerProSerGlyArgSerValLysProGluLysProGlyAlaArgArg 267
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765 TCTCCGTGAGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG 814
267 sarGValSerProValProPheGlnSerGlyArgLLeuThrProProArg 284
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815 ACAGAGTCTCCCGGCTGCTTCCAGAGTGGCAAAATCACACCCCGAA 864
284 rGluLysProSerProAspGlyPheSerProLysSerProGluGluThrSer 300
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865 GAGCCCCATCACCGGATGCTTCTCCCGTACAGCCAGAGAGAGAGAGC 914

301 ArgArgValAsnLysValMetArgAlaArgLeuTrpLeuLeuGlnGln 317
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915 CCGCCCGTGAACAAAGTGTAGAGAGCCAGGCTGTACCTGCTGCAGACAT 964
317 eGlyProAsnSerPheLeuLLeuGlyLysAspSerProAspAsnLysTrp 334
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965 AGGACCAACTCTTCTTGAATGGAGAGACAGTCCAGACATAAATACC 1014
334 rValPheLLeuLProGlnAsnLysSerGlyArgGlyAlaPheLys 350
  |||
1015 GGGTGTATTATGGGCGACAGAACTGACCTGTGGGCGTGGAGCATTCGT 1064
351 LLeuHisLeuLeuPheValMetLeuArgValPheGlnLeuGluProSerAs 367
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1065 ATTACACTTGTGTTGTCATGCTCCGGGTGTTTACAGTGAACCTCTGCA 1114
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1115 CCCCATTGATGAGAAACCTTAAATAATTTGAGGTTGAGAGTTTGT 1164
384 heGlnLysTrpHisSerArgSerSerArgLLeuLysAlaProSerArg 400
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1165 TCCAGAAATACACAGTAGAGCGGTAGCTGAGAAATCAAACCTCCATCCGG 1214
401 AsnThrLLeuGlnLysPheValSerArgMetSerAsnSerHisThrLeuSe 417
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451 LeuThrValCysGluAspGlyCysArgAsnLysLeuHisHisLysCysMe 467
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1365 CTGACTGTGTGTAGAGATGGCTGAGGAACAGCTGCACCACTATTCAT 1414
467 tSerLLeuTrpAlaGluLysCysArgArgAsnArgGluProLeuLLeuLys 484
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1415 GTCCATCTGGGCGGAGAGAGTGTAGAAATAGAGAGCCTTATATATGTC 1464
484 rLeuLysArgSerLysTrpArgSerHisAspPheTrpSerHisGluLeu 500
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534 erPheAsnLeuThrHisPheGlyThrGlnGlnLLeuProSerAlaTrpLys 550
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1615 GTTTTAACTTACTCATTTTGGAAACCCAGACAGATTCCTTCCGCTTACAA 1664
551 AspLeuAlaGluProTrpLLeuValPheGlyMetGluLeuValGlyLys 567
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1965 TTAATAACATTGAGAGCCATGCTGTATACACTCTTCGCCACAGTCTGGC 2014
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1134 alAlaValLeuSerProGluLysAlaGluAsnAspAspThrTyrLysAsp 1150
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XX	AA80911:
XX	03-NOV-1999 (first entry)
DT	
XX	
XX	
DE	Murine MEK1 cDNA.
XX	
KW	Murine MEK1 cDNA; Mitogen ERK kinase 1 protein; MEK1; protease
KW	extracellular signal regulated kinase; ERK; signal transduction pathway
KW	regulation; apoptosis; protein kinase; cleavage; caspase; antibody:
KW	kinase fragment; mutant MEK1 protein; NH2-terminal fragment; detection
KW	immunoreactive; diagnostic; therapeutic assay; reagent; disorder:
KW	aberrant expression; activation; MEK1 gene product; DNA probe; primer;
KW	selectively hybridise; ss.
XX	
OS	Mus sp.
XX	
FH	
FT	Key
FT	CDS
FT	Location/Qualifiers
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FT	/tag= a
FT	/product= "MEK1 protein"
FT	/function= "Regulates cellular apoptosis"
FT	1..14
FT	5'UTR
FT	3'UTR
FT	mat_peptide
FT	4497..5253
FT	/tag= c
FT	2637..4493
FT	/tag= d
FT	/note= "Active fragment that mediates apoptosis"
PN	W09941385-A1.
XX	
XX	19-AUG-1999.
PD	
XX	
XX	12-FEB-1999; 99WO-US02974.
PF	
XX	
PR	13-FEB-1998; 98US-0023130.
XX	
PA	(CADU-) CADUS PHARM CORP.
PI	
PI	Johnson GL.
XX	
DR	WPI: 1999-508649/42.
DR	P-PSDB: AAY26234.
PT	
PT	A new mammalian serine-threonine protein kinase for treating
PT	disorder characterized by aberration of the enzyme gene
XX	
PS	Claim 1a; Page 113-119; 149pp; English.
XX	
CC	The present sequence is an isolated murine MEK1 cDNA. It encodes
CC	Mitogen ERK kinase 1 (MEK1) protein, which functions to
CC	integrate proteases and signal transduction pathways involved in the
CC	regulation of apoptosis. It is a 196 kDa protein kinase, which upon
CC	cleavage at Asp 871/874 by caspase generates a 91 kDa kinase fragment
CC	that induces apoptosis and a 113 kDa NH2-terminal fragment. Mutant MEK1
CC	proteins that are resistant to cleavage by caspase proteases and capable
CC	of inhibiting apoptosis can be produced. MEK1 proteins and antibodies
CC	immunoreactive with MEK1 are used in diagnostic and therapeutic
CC	assays and reagents for detecting and treating disorders involving
CC	aberrant expression or activation of the MEK1 gene products. DNA probes
CC	or primers that selectively hybridise to MEK1 cDNA, can be used for its
CC	detection in samples.
XX	
XX	
XX	Sequence 5253 BP; 1299 A; 1403 C; 1433 G; 1118 T; 0 other:

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alignment_scores:      Length: 1493
                        Quality: 7735.00
                        Ratio: 5.181
                        Gaps: 0
Percent Similarity: 100.000 Percent Identity: 100.000
alignment_block:
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567	SleuPheSerArgAsnTyrPasnValArgGlnMetAlaLeuArgArgLeuS	584
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ID AAF27079 standard; DNA; 4693 BP.  
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AC AAF27079;  
XX  
DT 06-APR-2001 (first entry)  
XX  
DE Human MEK1 cDNA.  
XX  
KW Human MEK1; mitogen-activated protein kinase kinase 1;  
KW MEK kinase 1; MAP/ERK kinase 1; pro-apoptotic;  
KW apoptosis signal regulation; programmed cell death;  
KW serine/threonine kinase; MAP kinase cascade; JNK/SAPK;  
KW Jun N-terminal kinase/stress-activated protein kinase;  
KW Bcl-2 substrate; NF-kappa-B-mediated transcription regulation;  
KW expression inhibition; antisense therapy;  
KW hyperproliferative disorder; cancer; inflammation; sa.  
XX  
OS Homo sapiens.  
XX  
FH Key  
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FT 1..4485  
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FT /product= "Human MEK1"  
XX  
BN US6168950-B1.  
XX  
PD 02-JAN-2001.  
XX  
XX 23-JUL-1999; 99US-0359756.  
XX  
PF 23-JUL-1999; 99US-0359756.  
XX  
PR 23-JUL-1999; 99US-0359756.  
XX  
PA (ISIS-) ISIS PHARM INC.  
XX  
PI Monla BP, Cowser LM, Gaarde W, Ward DT;  
XX  
DR WPI: 2001-122264/13.  
XX  
DR P-PSDB; AAB60291.  
XX  
PT New antisense compound targeting nucleic acid encoding human  
PT mitogen-activated protein kinase kinase 1 (MEK1), useful for treating  
PT diseases or conditions associated with MEK1 expression, or preventing  
PT inflammation or tumor formation -  
XX  
XX Claim 1: Column 42-54; 35pp; English.  
XX  
PS This sequence represents human MEK1 cDNA. MEK1 (also known as mitogen-  
XX activated protein kinase; kinase kinase 1, MEK kinase 1 and MAP/ERK  
XX kinase kinase 1) is a dual-specific serine/threonine kinase which  
XX mediates cellular responses to mitogenic stimuli, being involved in  
XX JNK/SAPK (Jun N-terminal kinase/stress-activated protein kinase) MAP  
XX kinase cascades. MEK1 regulates signalling events associated with  
XX apoptosis (programmed cell death) and NF-kappa-B, both of which have  
XX been associated with the development of hyperproliferative disorders  
XX such as cancer. Specifically, MEK1 lies directly downstream of Bcl-2  
XX in an apoptotic signalling cascade, and plays a critical role in the  
XX control of NF-kappa-B-mediated transcription at multiple points in the  
XX apoptotic cascade. The invention relates to antisense oligonucleotides  
XX targeted to the human MEK1 gene, which inhibit its expression. A series  
XX of oligonucleotides (AAF27086-AAF27125) were designed to target different  
XX regions of the human MEK1 RNA, and were analysed for their effect on  
XX MEK1 mRNA levels by quantitative real-time PCR. The oligonucleotides of  
XX the invention are useful for diagnosis, prevention and treatment of  
XX conditions associated with MEK1 expression, such as inflammation, and  
XX cancer and other hyperproliferative disorders.  
SO Sequence 4693 BP; 1340 A; 1102 C; 1143 G; 1108 T; 0 other;

alignment\_scores: Quality: 6723.00 Length: 1501

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ID AA225069 standard; cDNA: 3911 BP.
XX AA225069;

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XX 09-DEC-1999 (first entry)
XX Human MEK1 nucleotide sequence.
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XX MEK1; MEK2; MEK3; mitogen-activated protein kinase; MAPK; ERK;
XX extracellular regulated kinase; signal transduction; regulation;
XX MAPK/ERK; MEK; MKK; inflammation; cellular proliferation;
XX differentiation; development; cell death; ss.
XX

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OS Homo sapiens.

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FH Key Location/Qualifiers
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PN W0947686-A2.

PD 23-SEP-1999.

PF 15-MAR-1999; 99WO-US05556.

PR 16-MAR-1998; 98US-0078153.

PR 04-SEP-1998; 98US-0099165.

XX (CADU-) CADUS PHARM CORP.

XX Johnson GL.

DR WPI: 1999-571843/48.

DR P-FSDB: AAY42104.

PT New human MEK1 polynucleotides and polypeptides, used for regulating

PS signal transduction in cells -

PS Claim 2; Fig 1; 159pp; English.

CC The present sequence encodes human mitogen-activated protein kinase/  
 CC extracellular response kinase (MAPK/ERK) kinase kinase (MEKK),  
 CC specifically designated MEKK1. The MEKK proteins are used to modulate  
 CC gene transcription in a cell encoding MEKK, as well as for regulation of  
 CC in inflammation, regulation of cellular proliferation and  
 CC differentiation, regulation of development, regulation of cell death or  
 CC MEK1 polynucleotides can be used to produce the protein recombinantly  
 CC and as a source of probes and primers.

SQ Sequence 3911 BP; 1058 A; 973 C; 975 G; 905 T; 0 other;

#### alignment\_scores:

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Quality: 6575.50 Length: 1303
Ratio: 5.089 Gaps: 1
Percent Similarity: 99.156 Percent Identity: 97.314

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#### alignment\_block:

US-09-403-075-4 x AA225069 ..

Align seg 1/1 to: AA225069 from: 1 to: 3911

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207 lvalysProileProilelysglyaspGlyserGluValAsnLeuA 224
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53 GGTAAACCAATCCAGTTAAAGAGATGATCTGAAATGAATCACTTAG 102
224 lalagluProglnglyglnglyGlnalaglySeralalapro 240
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seq\_documentation\_block:  
ID AAX80912 standard; cDNA; 3911 BP.

AC AAX80912;

DT 03-NOV-1999 (first entry)

DE Human MEK1 cDNA.

XX Human MEK1 cDNA. Mitogen ERK Kinase 1 protein; MEK1; protease;  
XX extracellular signal regulated kinase; ERK; signal transduction pathway;  
XX regulation; apoptosis; protein kinase; cleavage; caspase; antibody;  
XX kinase fragment; mutant MEK1 protein; NH2-terminal fragment; detection;  
XX immunoreactive; diagnostic; therapeutic assay; reagent; disorder;  
XX aberrant expression; activation; MEK1 gene product; DNA probe; primer;  
XX selectively hybridise; ss.

OS Homo sapiens.

XX Key Location/Qualifiers  
FH CDS 3..3911

FT /tag= a

FT /product= "MEK1 protein"

FT /function= "Regulates cellular apoptosis"

FT /tag= b

FT /note= "Active fragment that mediates apoptosis"

XX W09941385-A1.

XX 19-AUG-1999.

XX 12-FEB-1999; 99MO-US02974.

XX 13-FEB-1998; 98US-0023130.

XX (CADU-) CADUS PHARM CORP.

XX Johnson GL.

XX WPI: 1999-508649/42.

XX P-PSDB: AAY26235.

XX A new mammalian serine-threonine protein kinase for treating  
XX disorder characterized by aberration of the enzyme gene  
XX Claim 5a; Page 124-130; 149pp; English.  
XX The present sequence is an isolated human MEK1 cDNA. It encodes

CC Mitogen ERK Kinase Kinase 1 (MEK1) protein, which functions to  
CC integrate proteases and signal transduction pathways involved in the  
CC regulation of apoptosis. It is a 196 kDa protein kinase, which upon  
CC cleavage at Asp 681/684 by caspase generates a 91 kDa kinase fragment  
CC that induces apoptosis and a 113 kDa NH2-terminal fragment. Mutant MEK1  
CC proteins that are resistant to cleavage by caspase proteases and capable  
CC of inhibiting apoptosis can be produced. MEK1 proteins and antibodies  
CC immunoreactive with MEK1 proteins are used in diagnostic and therapeutic  
CC assays and reagents for detecting and treating disorders involving  
CC aberrant expression or activation of the MEK1 gene products. DNA probes  
CC or primers that selectively hybridise to MEK1 cDNA, can be used for its  
CC detection in samples.  
XX

SO Sequence 3911 BP; 1058 A; 973 C; 975 G; 905 T; 0 other;

alignment\_scores:

Quality: 6575.50 Length: 1303  
Ratio: 5.089 Gaps: 1  
Percent Similarity: 99.156 Percent Identity: 97.314

alignment\_block:

US-09-403-075-4 x AAX80912 ..  
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ID AA079325 standard; cDNA: 3260 BP.
XX
AC AA079325;
XX
DT 28-JUN-1995 (first entry)
XX
DE Mammalian MEK kinase (MEK 1) cDNA.
XX
KW MEK kinase; MEK 1; mitogen-activated protein kinase regulator;
KW MARK; cell atrophy inhibition; Parkinson's; Alzheimer's; cancer;
KW autoimmune diseases; allergies; wound healing; oncogenes;
KW tumour agents; neurotropic growth factor; ds.
XX
OS Mus musculus.
XX
FH Key Location/Qualifiers
FT CDS 486..2504
FT /*tag= a
XX
W09424159-A.

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Thu Apr 11 16:26:19 2002

us-09-403-075-4.p2n.rng

XX 27-OCT-1994.  
PD 15-APR-1994: 94MO-US04178.  
XX 15-APR-1993: 93US-0049254.  
XX (NAJE-). NAT JEWISH CENT IMMUNOLOGY & RESPIRATORY.  
PA Johnson GL:  
PI WPI: 1994-357747/44.  
DR P-SDS: AAR66029.  
XX New MEK kinase protein and related antibodies and nucleic acid  
XX regulator of mitogen activated protein kinase, useful  
PT therapeutically to inhibit cell atrophy, to screen for oncogenes  
PT etc.  
PS Claim 6: Page 8: 84pp: English.  
XX AAQ79325 encodes AAR66029 the mammalian MEK kinase (MEK 1), other  
CC unique mammalian MEK kinases identified by PCR are described in  
CC AAR66030 (MEK 2), AAR66031 (MEK 3) and AAR66032 (MEK 4). MEK is an  
CC activator, independent of Raf protein, of mitogen-activated protein  
CC kinases (MAPK). Inactivation of MEK can be used in the treatment  
CC of some cancers, autoimmune diseases and allergies, while  
CC stimulation can promote wound healing. MEK can also be used to  
CC alleviate cellular atrophy in Parkinson's or Alzheimer's by acting  
CC as a neurotrophic growth factor, and to screen for oncogenes and  
CC tumour agents.  
XX Sequence 3260 BP: 869 A: 837 C: 793 G: 761 T: 0 other:  
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676 uArgProValAlaAspThrIleLeuValLysCysAlaAspAlaAsnSerA 693  
51 CCGGCCAGTTGTAGACACTATCTCTTCAAGTGTGCAATCC AACAGCC 99  
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700 CCGTTGACACACAGTCCATACAGAGAAACCTGAAAGACTAAGTCT 749  
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1460 ProG1yLeuArgAspValAlaValArgCysLeuGluLeuGlnProGlnAs 1476
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ID AAV22676 standard; CDNA; 3260 BP.
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AC
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DT 17-JUL-1998 (first entry)
XX
DE CDNA encoding a murine mitogen-activated protein kinase (MAPK).
XX
XX Mitogen-activated protein kinase kinase; MAPKK; mouse;
KW extracellular signal-regulated kinase kinase; MEKK; regulation;
KW signal transduction; raf-independent arm; screening assay; treatment;
KW disorder; cancer; autoimmune disease; inflammation; allergy;
KW neuronal disease; Parkinson's disease; Alzheimer's disease; ds.
XX
OS Mus sp.
XX
XX Key Location/Qualifiers
FH 5'UTR 1..485 /*tag= a
FT CDS 486..2504 /*tag= b
FT 3'UTR 2502..3260 /*tag= c
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XX 19-MAY-1998.
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XX 06-JUN-1995; 95US-0472934.
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XX 15-APR-1993; 93US-0049254.
XX 14-OCT-1994; 94US-0323460.
XX 21-FEB-1995; 95US-0354516.
XX 12-MAY-1995; 95US-0440421.
XX
XX (NAJE-) NAT JEWISH CENT IMMUNOLOGY & RESPIRATORY.
XX Johnson GL;
XX
XX WPI; 1998-311395/27.

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DR P-PSDB: AAW56157.

XX Screening assay for regulators of MEKK signal transduction - using  
PT mammalian MEKK polypeptide

PS Claim 6: Columns 29-34; 48bp; English.

XX The present sequence encodes a murine mitogen-activated protein kinase  
CC kinase (MAPKK) (also known as extracellular signal-regulated kinase  
CC kinase (MEKK)). The protein, which is serine/threonine kinase is capable  
CC of regulating signal transduction in cells. It regulates the activity of  
CC elements of the raf-independent arm of MEKK. A screening assay for  
CC compounds that regulate signal transduction by a mammalian MEKK polypeptide and  
CC contacting a reaction mixture containing a mammalian MEKK polypeptide and  
CC a test compound and determining the effect of the test compound on an  
CC indicator of signal transduction by the MEKK polypeptide in the reaction  
CC mixture. Compounds identified by the above assay can be used to prepare  
CC therapeutic compositions for treating disorders that are subject to  
CC regulation or cure by manipulating a signal transduction pathway in  
CC cells involved in the disorders, e.g. cancer, autoimmune diseases,  
CC inflammations, allergies, and neuronal diseases such as Parkinson's  
CC disease and Alzheimer's disease.

XX Sequence 3260 BP; 869 A; 837 C; 793 G; 761 T; 0 other;

## alignment\_scores:

Quality: 4252.00 Length: 834  
Ratio: 5.104 Gaps: 0  
Percent Similarity: 99.880 Percent Identity: 99.880

alignment\_block:

US-09-403-075-4 x AAV22676 ..

Align seg 1/1 to: AAV22676 from: 1 to: 3260

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 1260 AsnThrSerSerGluGlnGluValValGluAlaLeuArgGluGlu 1276  
 1800 AACACATCCCTCCAGAGAGAGGTGTGAAGCCTTGAGGAGAGAGAT 1849  
 1276 eArgMetMetGlyHisLeuAsnHisProAsnIleIleArgMetLeuGln 1293  
 1850 CCGGATGATGGTCACTCAACCATCAACATCATCCGATCGTGGGG 1899  
 1293 IatThrCysGluLysSerAsnTyrAsnLeuPheIleGluTrpMetAlaGly 1309  
 1900 CCACGTCCGAGAGAGCACTACACCTCTTCATGTAGTGAATGGCGGA 1949  
 1310 GlySerValAlaHisLeuLeuSerLysTyrGlyAlaPheLysGluSerVal 1326  
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 2000 CGTCATTTACTACACTGACAGTACTGCTGGCTTCTCTATCTCCACG 2049  
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 1360 SerThrGlyLysArgLeuArgGlyLeuAlaAspPheGlyValAlaAlaArgLe 1376  
 2100 AGACCCGCTAGAGGCTGAGAAATTCGACCTTGGAGCTCTCCGACAGT 2149  
 1376 uAlaSerLysGlyThrGlyAlaGlyLysPheGlnGlnLeuLeuGly 1393  
 2150 GGATCTCAAAAGGAACCGGTCCAGAGAGTTCAGGAGCACTTACTGGGA 2199  
 1393 hTrIleAlaPheMetAlaProGluValLeuArgGlyGlnGlnTyrGlyArg 1409  
 2200 CAATTCATTCATGGCGCTGAGGTCTTAAGAGGTGACGATATGGTAGG 2249  
 1410 SerCysAspVal1TrpSerValGlyCysAlaIleIleGluMetAlaCysAl 1426  
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 2350 TTAAGATTGCTAGCGCAACTACTGCAACCGTCATCCGTCACACTGTCC 2399  
 1460 ProGlyLeuArgAspValAlaValArgCysLeuGlnLeuGlnProGlnAs 1476  
 2400 CCGGCTTCGGCAGACGTGGCGCTGCTGTAGAACTTCAGGCTCAGCA 2449  
 1476 pArgProProSerArgGluLeuLeuLysHisProValPheArgThrThr 1493  
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 seq\_documentation\_block:  
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 AC AA231877;  
 XX  
 DT 24-JAN-2000 (first entry)  
 XX  
 DE Mitogen ERK kinase kinase, MEK-1, coding sequence.  
 XX  
 KW Mitogen ERK kinase kinase; MEK; MEK-1; neurological disorder; cancer;  
 KW extracellular signal-regulated kinase; inflammation; autoimmune disease;  
 KW allergic reaction; hormone related disease; therapy; ds.  
 XX  
 OS Mus sp.  
 XX  
 PN US5981265-A.  
 XX  
 PD 09-NOV-1999.  
 XX  
 PF 05-JUN-1995; 95US-0461146.  
 XX  
 PR 15-APR-1993; 93US-0048254.  
 PR 12-MAY-1995; 95US-0440421.  
 PR 15-APR-1994; 94WO-0504178.  
 PR 14-OCT-1994; 94US-0323460.  
 PR 14-OCT-1994; 94WO-US11690.  
 PR 28-NOV-1994; 94US-0345516.  
 XX  
 PA (NAJE-) NAT JEWISH CENT IMMUNOLOGY & RESPIRATORY.  
 XX  
 PI Johnson GL;  
 XX  
 DR WPI: 1999-633328/54.  
 DR P-PSDB: AA43318.  
 XX  
 PT Regulating mitogen extracellular signal-regulated kinase protein  
 PT activity, useful for the treatment of cancer, neurological diseases and  
 PT autoimmune diseases  
 XX  
 PS Claim 1; Column 49-54; 94pp; English.  
 XX  
 CC This sequence encodes the mitogen ERK (extracellular signal-regulated  
 CC kinase) kinase kinase-1 (MEK-1). The invention relates to a method of  
 CC regulating MEK protein activity in a fungal cell by transforming or  
 CC transfecting the cell with a nucleic acid encoding an MEK protein. The  
 CC MEK protein is useful for treating cancer, inflammation, neurological  
 CC disorders, autoimmune diseases, allergic reactions, and hormone related  
 CC diseases.  
 XX  
 SQ Sequence 3260 BP; 869 A; 837 C; 793 G; 761 T; 0 other;

## alignment\_scores:

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Ratio: 5.104 Gaps: 0  
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alignment\_block:  
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676 uArgProValValAspThrIleLeuValLysCysAlaAspAlaAsnSer 693
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150 GCAGAGAGCTGGCGGTGGAGAGAAATACTTAAGCTGGTCCATCCG 199
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350 TGTCTCAAAAGCTGAGCTGTGAAATCAGGTACAGAAAGCTGCTCC 399
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810 LysLeuSerArgArgIleTyrLeuSerSerAlaArgMetValThrAlaVal 826
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826 LProAlaValPheSerLysLeuValThrMetLeuAsnAlaSerGlySer 843
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500 GCCCGCTGTTTTCACAGCTGGTGAACCATGCTTAATGCTTGTGGCTCA 549
843 hrHisPheThrArgMetArgArgArgLeuMetAlaIleAlaAspGluVal 859
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550 CCCACTTCACCAAGATGCCCGGCTGTGATGGCTATCGCGGATGAGCTA 599
860 GlnIleAlaGluValIleGlnLeuGlyValGluAspThrValAspGlnH 876
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600 GAATATGGCCAGAGTCATCCAGTGGGTGTGAGAGACACTGTGATGGGCA 649
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960 SerHisAlaGlnLeuMetPheProAlaProSerAlaProCysSerSerAl 976
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900 TCTCATGCTCATTTAATGTTCCAGCACATCAACCCCTTGTCTCTGTC 949
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1200 AGTAGCATGACACTTGTATGTGGGAGTGTCTCCAGGTGTACACACACT 1249
1076 eGlyGlyGlyGlyAsnSerGlyAsnAlaValIleProSerAspGlnThr 1093
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2100 ACCACCGGCTCAGAGGCTGAGAAATGGCAGACTTGGAGCTGCTCCAGT 2149
1376 uAlaSerLysGlyThrGlyAlaGlyLupheGlnGlnLeuLeuGlyLT 1393
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1410 SerCysAspValTrpSerValGlyCysAlaIleIleGluMetAlaCysAl 1426
2250 AGCTGTGATGTATGGAGTGTGGCTGCCCATTTATGAATGGCTTGTGC 2299
1426 aLysProPOTPrAsnAlaGlnubysHisSerAsnHISLeuAlaLeuIleP 1443
2300 AAAACACCTTGGAAATGCAGAAAAACATCCATCACTTCGCTTATAT 2349
1443 helysIleAlaSerAlaThrThrAlaProSerIleProSerHISLeuSer 1459
2350 TTAAGATGCTGAGCGCACTGACGACGTCATCCGTCACACGCTGTC 2399
1460 ProGlyLeuArgAspValAlaValArgCysLeuGlnLeuGlnProGlnAs 1476
2400 CCGGGTCTGGCGAGCTGGCGCTGCTTAAAGACTTCAGGCTTCAGGA 2449
1476 pArgProPOTPrAspArgGlnLeuLeuLysHISProValPheArgThrThT 1493
2450 CCGGCTCTCGCTCCAGAGAGCTGCTGAACAATCCGCTTCCGTAACACGT 2499
1493 rp 1493
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AC AAV45619;
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DT 04-MAR-1999 (first entry)
XX
DE MEK1 protein coding sequence.
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KW Mitogen activated protein kinase kinase kinase; MEK1; MAPK; MEK; cancer;
KW apoptosis regulator; autoimmune disease; inflammation; allergy; therapy;
KW neuronal disorder; ss.
XX
OS Mus sp.
XX
FH Key location/Qualifiers
FT CDS 486..2501
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XX
XX US5854043-A.
XX
XX PD 29-DEC-1998.
XX
XX PF 14-OCT-1994; 94US-0323460.
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XX PR 14-OCT-1994; 94US-0323460.
XX PR 15-APR-1993; 93US-0049254.
XX PR 15-APR-1994; 94WO-US04178.
XX
XX (NAME-) NAT JEWISH CENT IMMUNOLOGY & RESPIRATORY.
XX
XX PI Johnson GL;
XX
XX DR WPI: 1999-094912/08.
XX DR P-PSDB: AAW73536.
XX
XX PT Mitogen activated protein kinase kinases and their fragments -
XX PT used for regulating signalling from growth factor receptors, e.g. to
XX PT modulate apoptosis for treatment of cancer, autoimmune disease and
XX PT inflammation
XX
XX PS Example 1: Column 11-16; 96pp: English.
XX
XX CC This sequence encodes the MEK1 protein of the invention. MEK proteins
XX CC are mitogen-activated protein kinase (MAPK) kinase (MEK) kinase proteins.
XX CC MEKs phosphorylate and activate MEK proteins and other signal
XX CC transduction molecules, so can regulate signalling initiated from a
XX CC growth factor receptor in a way different from that involving Raf
XX CC protein. Particularly MEKs, or their fragments, are involved in
XX CC regulation of apoptosis so they, or agents that increase their activity,
XX CC are used to treat cancers, autoimmune diseases, inflammation, allergies,
XX CC neuronal disorders (e.g. Alzheimer's or Parkinson's diseases) and in
XX CC wound healing. MEKs are also useful for identifying agents that
XX CC regulate signal transduction from cell surface receptors (e.g. from their
XX CC effect on ability of MEK1 to phosphorylate a substrate such as MEK or Jun
XX CC extracellular signal-regulated kinase).
XX
XX SQ Sequence 3260 BP; 869 A; 837 C; 793 G; 761 T; 0 other;

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alignment_scores:
  Quality: 4252.00      Length: 834
  Ratio: 5.104          Gaps: 0
  Percent Similarity: 99.880  Percent Identity: 99.880
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Align seg 1/1 to: AAV45619 from: 1 to: 3260

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676 uArgProValValAspThrIleLeuValIysCysAlaAspAlaAsnSerA 693
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    |||||
100 GCACAGAGTACGTCTCATATCTACAGTGTGGAAGCTCGCAAGGCCAA 149
710 AlaGlyGluLeuAlaValGlyArgGluIleLeuLysAlaGlySerIleG 726
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150 GCAGAGAGAGCTGGCGTTGGAGAAATACTTAAAGCTGGGTCCATCGG 199
726 yValGlyGlyValAspTyrValLeuSerCysIleLeuGlyAsnGlnAlaG 743
    |||||
200 GGTGTGTGTGTCTGATACGTCTTAAGTTGTATCTTGGAAACCAAGCTG 249
743 lUSeAsnAspTrpGlnGluLeuGlyArgLeuGlyLeuIleAspArg 759
    |||||
250 AATCAACAACCTGGCAACAACCTGGGTGGCTCTCTTATAGACAGG 299
760 LeuLeuGluGluPheProAlaGluPheTyrProHisIleValSerThrAs 776
    |||||
300 TTGCTGTGGAAATTCCTGCTGAATCTATCTCATATTGTCAGTACTGA 349
776 pValSerGlnAlaGluProValGluIleArgTyrLysLysLeuLeuSerL 793
    |||||
350 TGCTCACAACCTGAGCCTGTGAAATCAGGTACAAAGACCTGCTCTCC 399
793 eUleuThrPheAlaLeuGlnSerIleAspAsnSerHisSerMetValGly 809
    |||||
400 TCTTAACCTTTGCTTGCATCTCATTCACATTCCTCAGTGTGTTGGC 449
810 LysLeuSerArgArgGlyIleTyrLeuSerSerAlaArgMetValThrAla 826
    |||||
450 AAGCTCTCTCGAGAGATATATCTAGCTCTGCCAGATGGTGGACGAGT 499
826 lProAlaValPheSerLysLeuValThrMetLeuAlaSerGlySerT 843
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500 GCCCGCTGTGTTTCCAAAGCTGGTGAACCATGCTTAATGCTTGTGCTCA 549
843 hHisPheThrArgMetArgArgLeuMetAlaIleAlaAspGluVal 859
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550 CCCACTTCACAGAGATGGCGGGGTGTGATGGTATCCGGGATGAGCTA 599
860 GluIleAlaGluValIleGlnLeuGlyValGluAspThrValAspGlyH 876
    |||||
600 GAATTCGCCAGGTCAATCAGCTGGGTGTGAGAGACACTGTGATGGCA 649
876 sGlnAspSerLeuGlnAlaValAlaProThrSerCysLeuGluAsnSerS 893
    |||||
650 TCAGGACAGCTTACAGGCCCTGGCCCCACCAAGCTGTGAAACAAGCT 699
893 eTLeuGluHisThrValHisArgGluLysThrGlyLysGlyLeuSerAla 909
    |||||
700 CCTTGTGAGCACAGTCCATAGAGAGAAACTGAAAGAGCACTAAAGTGC 749
910 ThrArgLeuSerAlaSerSerGluuAspIleSerAspArgLeuAlaGly 926
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750 ACAGAGACTGAGTCCAGCTCGAGGACATTTCTGACAGACTGGCCGCGCT 799
926 lSerValGlyLeuProSerSerThrThrThrGluGlnProLysProAlaY 943
    |||||
800 CTCTGTAGAGACTTCCAGCTCAACAACAACAAGAACCAACCAACCCGCG 849
943 aGlnIleThrLysGlyArgProHisSerGlnCysLeuAsnSerSerProLeu 959
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960 SerHisAlaGlnLeuMetPheProAlaProSerAlaProCysSerSerAl 976
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1300 TGTTCAACGCCGGTGGAGACAAAGTGCAGTTAGATGTGAACACCGAGCT 1349
1110 AsnSerSerIleGluAspLeuGluAlaSerMetProSerSerAspTh 1126
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FT      /+tag= c  

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XX      PN  

XX      PD  

XX      13-JUN-2000.  

XX  

XX      05-JUN-1995;    95US-0461145.  

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XX      15-APR-1993;    93US-0049254.  

XX      PR      12-MAY-1995;    95US-0440421.  

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XX      PR      14-OCT-1994;    94US-0323460.  

XX      PR      14-OCT-1994;    94WO-US11690.  

XX      PR      21-FEB-1995;    95US-0354516.  

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XX      (NAME-) NAT JEWISH CENT IMMUNOLOGY & RESPIRATORY.  

XX  

XX      PI      Johnson GL;  

XX      DR      WPI: 2000-411281/35.  

XX      DR      P-PSTDB: AAB01216.  

XX  

XX      PT      Novel mitogen extracellular signal-regulated kinase (MEKK)  

XX      PT      protein useful for treating cancer, inflammation, autoimmune diseases,  

XX      XX      neurological disorders and hormone related disease in animals  

XX      PS      Disclosure; Column 47-54; 92pp; English.  

XX  

CC      CC      The present sequence is the murine mitogen ERK kinase MEK1)  

CC      CC      coding sequence. MEK1 is involved in a signal transduction pathway  

CC      CC      which can ultimately lead to apoptosis. The proteins regulated by MEK1  

CC      CC      include the MEK and MAPK proteins and c-Myc. The coding sequences was  

CC      CC      identified by searching a mouse liver cDNA library for sequences similar  

CC      CC      to the Steil and Byr2 genes from yeast (these are MEK homologues). The  

CC      CC      gene and protein can be used to treat diseases such as cancer, and  

CC      CC      autoimmune disease, inflammatory responses, allergic responses, and  

CC      CC      neuronal disorders including Parkinson's disease and Alzheimer's disease  

XX      XX      SQ      Sequence 3260 BP; 869 A; 837 C; 793 G; 761 T; 0 other;
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 XX  
 PS Claim 3: Page 26-28; 147pp: English.  
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PT increase
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1266	ugluValValaLualaleuarGluIuIeargMetMetGlyHisLeuA	1283
424	AGCTCATGTTAGAGAGCTTGAGAGAAAGAGTAATCTATTGAAGAATCT	473
1283	snHISProASnIleLeuArgmetLeuGlyAlaThrCysGluIlySerAsn	1299
474	CCCCATCCCAACATATGATGAGATATTGGCAATCGCAAGAGGACAGATCA	523
1300	TyrAsnLeuPheIleGluTrpMetAlaGlyIlySerValAlaHisLeuLe	1316
524	TTAATATATTGTTGGAAATTTGTTCCGTGGCTCAATCTGCTGACTTTT	573
1316	uSerIlyTyrClYalAphelysgIuSerValValIleasnTyrThrGlu	1333
574	GGGAAATTTTGACATCTTCCCTGATCTGTATTGAAGATGACACCAAGC	623
1333	IuLeuLeuArgGlyLeuSerTyrLeuHisGluAsnGlnIleIleHisArg	1349
624	AATGTATTATTGGGTTGGCAATACTGTGCATTAAGAAGCGCATTTATCCACA	673
1350	AspValIlysgClYalAasnLeuLeuIleAspSerThrGlyGlnArgLeuA	1366
674	GATATTAAAGAGCAACAATCTGTTGACATTAAGGT...TGCATTAA	720
1366	gIleAlaAspPheIlyAlaAlaAlaArgLeuAlaSerIlysgIlyThr	1383
721	ACTGTGCAATTTGCGTGCATCCCAAGAAGGTGTGAATTTGGCTACTATGA	770
1383	IagIlyuPheGlnGlyIuLeuLeuGlyThrIleAlaPheMetAlaPro	1399
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1416	IglYcysAlaIleIleGluMetAlaCysAlaIlyProProTPrAsnAlaG	1433
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XX		
DT	05-JUN-2000 (first entry)	



PD 17-FEB-2000.  
 XX 04-AUG-1999: 99WO-EP05652.  
 XX 04-AUG-1998: 98EP-0202634.  
 PR (VLA-) VLAMS INTERUNIVERSITAIR INST BIOTECHNOG.  
 XX Lee JH, Verbruggen N;  
 XX WPI: 2000-205726/18.  
 DR P-PsDB: AAY77941.  
 PT Isolation of polynucleic acids useful for producing transgenic plant by  
 PT isolating genes involved in tolerance to environmental stress  
 XX  
 PS Claim 4: Page 143-146; 312pp: English.  
 CC The invention relates to isolation of coding sequences and/or genes  
 CC involved in tolerance to environmental stress in plants. The sequences  
 CC (AAZ98305-298365) are useful for producing a transgenic plant having  
 CC enhanced tolerance or resistance to environmental stress conditions such  
 CC as anaerobic, flooding, cold, dehydration, drought, heat stress or  
 CC salinity. This is useful for producing improved yield, growth,  
 CC development and productivity under environmental stress conditions, and  
 CC also provides growth of crops in areas where they cannot grow without  
 CC the induced osmotic tolerance. Sequences AAZ98305-365 represent  
 CC polynucleotide sequences from *A. thaliana* that are involved in  
 CC environmental stress tolerance.  
 XX  
 SQ Sequence 1984 BP; 572 A; 415 C; 480 G; 517 T; 0 other;

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 Quality: 575.00 Length: 285  
 Ratio: 2.738 Gaps: 5  
 Percent Similarity: 73.684 Percent Identity: 40.702

alignment\_block:  
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Align seg 1/1 to: AAZ98321 from: 1 to: 1984

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214 GATTGGCGTGAAGAAAGGCGAATTAACTGCGTTCGCTTTGGAGAG 263
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264 TTTCATGAGGAATGAACCTCGATTCGGGAGCTTCTTGCAATTAAACAG 313
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1255 ValThrTyrValArgAsnThrSerSerGlnGlnGluVal.....Va 1269
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314 GTTTTAATCGCTCCAGAGCAGTCTTCAAAGAGAACTCAGGTCACAT 363
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1269 1GluAlaLeuArgGluGluIleArgMetMetGlyHisLeuAsnHisProA 1286
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364 CCGAGAGCTTGAAGAAAGTAACTTCTTAAGAATCTTTCACATCCGA 413
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1286 snIleIleArgMetLeuGlyAlaThrCysGlnLysSerAsnTyrAsnLeu 1302
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414 ACATCGTTAGATACCTGCTACTGTAAGAGAGATGATCGTTGAATAT 463
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1303 pheIleGluThrMetAlaGlyLysSerValAlaHisLeuLeuSerLysTy 1319
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464 TTGATGAGAGTTTGTTCTGCTGATCAATATCATCTTGTGGAGAGATT 513
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1319 rGlyAlaPheLysGluSerValValIleAsnTyrThrGlnIleLeuA 1336
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1353 GLYAlaAsnLeuLeuIleAspSerThrGlyGlnArgLeuArgIleAlaAs 1369
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614 GGGGCAATATTTTGGTCCGATACAAAGGT...TGATCAGACTCCGACA 660
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1369 pPheGlyAlaAlaAlaArgLeuAlaSerLysGlyThrGlyAlaGlyLup 1386
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1386 heGlnGlnLeuLeuGlyThrIleAlaPheMetAlaProGluValLeu 1402
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1403 ArgGlyGlnGlnTyrGlyArgSerCysAspValTyrSerValGlyCysAl 1419
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1436 eAsnHisLeuAlaLeuIlePheLysIleAlaSerAlaThrThrAlaPro 1452
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1453 SerIleProSerHisLeuSerProGlyLeuArgAspValAlaValArgCy 1469
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899 CCAATTCCAGAAAGCTCTCCACCAAGAGCTAAAGACTTTTATGAATG 948
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1469 sLeuGluLeuGlnProGlnAspArgProProSerArgGlyLeuLeuLysH 1486
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949 CTTACACAAAGAACCAAGCTTGAAGACTCTGCAACGCAATTCCTCAGC 998
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Qy	4395	ggtctgcgcagcgttggtccgtgtcgtcttagaacttcaagc		
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Qy	4455	agagaagctgtctgaaacatccggtctctccgtaccagctgtac		
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Claim 6; Page 8; 84pp; English.

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XX AAQ79325 encodes AAR6029 the mammalian MEK kinase (MEK 1), other  
CC unique mammalian MEK kinases identified by PCR are described in  
CC AAR6030 (MEK 2), AAR6031 (MEK 3) and AAR6032 (MEK 4). MEK is an  
CC activator, independent of Raf protein, of mitogen-activated protein  
CC kinases (MAPK). Inactivation of MEK can be used in the treatment  
CC of some cancers, autoimmune diseases and allergies, while  
CC stimulation can promote wound healing. MEK can also be used to  
CC stimulate cellular atrophy in Parkinson's or Alzheimer's by acting  
CC as a neurotrophic growth factor, and to screen for oncogenes and  
CC tumour agents.

XX Sequence 3260 BP, 869 A, 837 C, 793 G, 761 T, 0 other;

Query Match 61.8%; Score 3245.8; DB 15; Length 3260;  
Best Local Similarity 99.9%; Pred. No. 0;  
Matches 3258; Conservative 0; Mismatches 2; Indels 1; Gaps 1;

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## RESULT 7

AAV22676  
 ID AAV22676 standard; cDNA; 3260 BP.  
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 AC AAV22676;  
 XX  
 DT 17-JUL-1998 (first entry)  
 XX  
 DE cDNA encoding a murine mitogen-activated protein kinase (MAPK).  
 XX

KW Mitogen-activated protein kinase kinase; MAPK; mouse;  
 KW extracellular signal-regulated kinase kinase; MEKK; regulation;  
 KW signal transduction; raf-independent arm; screening assay; treatment;  
 KW disorder; cancer; autoimmune disease; inflammation; allergy;  
 KW neuronal disease; Parkinson's disease; Alzheimer's disease; ds.  
 KW  
 XX

OS Mus sp.

XX Key Location/Qualifiers

XX 5'UTR 1..485

XX CDS /\*tag= a

XX FT 486..2504

XX FT /\*tag= b

XX FT 2502..3260

XX FT /\*tag= c

XX US5753446-A.

XX PN 19-MAY-1998.

XX PD 06-JUN-1995; 95US-0472934.

XX PE 15-APR-1993; 93US-0049254.

XX PR 14-OCT-1994; 94US-0323460.

XX PR 21-FEB-1995; 95US-0354516.

XX PR 12-MAY-1995; 95US-0440421.

XX (NAME-) NAT JEWISH CENT IMMUNOLOGY & RESPIRATORY.

XX PA Johnson GL.

XX PI MPI: 1998-311395/27.

XX DR P-PSDB: AAW56157.

XX XX Screening assay for regulators of MEKK signal transduction - using

XX PT mammalian MEKK polypeptide

XX XX Claim 6; Columns 29-34; 48pp; English.

XX PS

XX The present sequence encodes a murine mitogen-activated protein kinase

XX CC kinase (MAPK) (also known as extracellular signal-regulated kinase

XX CC kinase (MEKK)). The protein, which is serine/threonine kinase is capable



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AC AA079325;
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DT 28-JUN-1995 (first entry)
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XX DE Mammalian MEK kinase (MEK 1) cDNA.
XX
KW MEK kinase; MEK 1; mitogen-activated protein ki
KW MARK; cell atrophy inhibition; Parkinson's; Alzh
KW tumour agents; neurotropic growth factor; ds.
XX
XX OS Mus musculus.
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XX FH Key
XX FT CDS Location/Qualifiers
XX FT 486..2504
XX PN /tag= a
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W09424159-A.

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XX 27-0CT-1994.  
 PD 15-APR-1994: 94MO-US04178.  
 PF 15-APR-1993: 93US-0049254.  
 PR (NAJE-) NAT JEWISH CENT IMMUNOLOGY & RESPIRATORY.  
 PA Johnson GL;  
 PI WPI: 1994-357747/44.  
 DR P-PSDB: AAR66029.  
 XX New MEK kinase protein and related antibodies and nucleic acid  
 PT regulator of mitogen activated protein kinase, useful  
 PT therapeutically to inhibit cell atrophy, to screen for oncogenes  
 PT etc.  
 PS Claim 6; Page 8; 84pp; English.  
 XX  
 CC AAQ79325 encodes AAR66029 the mammalian MEK kinase (MEK 1), other  
 CC unique mammalian MEK kinases identified by PCR are described in  
 CC AAR66030 (MEK 2), AAR66031 (MEK 3) and AAR66032 (MEK 4). MEK is an  
 CC activator. Independent of Raf protein, of mitogen-activated protein  
 CC kinases (MAPK). Inactivation of MEK can be used in the treatment  
 CC of some cancers, autoimmune diseases and allergies, while  
 CC stimulation can promote wound healing. MEK can also be used to  
 CC alleviate cellular atrophy in Parkinson's or Alzheimer's by acting  
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ID AAV22676 standard; cDNA; 3260 BP.  
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DF 17-JUL-1998 (first entry)  
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DE cDNA encoding a murine mitogen-activated protein kinase (MAPK).  
XX  
XX Mitogen-activated protein kinase kinase: MAPKK; mouse;  
KW extracellular signal-regulated kinase kinase: MEKK; regulation;  
KW signal transduction; raf-independent arm; screening assay; treatment;  
KW disorder; cancer; autoimmune disease; inflammation; allergy;  
KW neuronal disease; Parkinson's disease; Alzheimer's disease; ds.  
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XX PF 06-JUN-1995; 9505-0472934.  
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XX (NAJE-) NAT JEWISH CENT IMMUNOLOGY & RESPIRATORY.  
XX Johnson GL;  
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LOCUS RNU48596 5180 bp mRNA ROD 05-JUN-1996  
DEFINITION Rattus norvegicus MAP kinase kinase kinase 1 (MEKK1) mRNA, complete cds.

ACCESSION U48596  
VERSION U48596.1 GI:1354136  
KEYWORDS

SOURCE Norway rat.  
ORGANISM Rattus norvegicus  
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;  
Rattus.

REFERENCE 1 (bases 1 to 5180)

AUTHORS Xu, S., Robbins, D.J., Christerson, L.B., English, J.M.,  
Vanderbilt, C.A. and Cobb, M.H.

TITLE Cloning of rat MEK kinase 1 cDNA reveals an endogenous  
membrane-associated 195-kDa protein with a large regulatory domain

JOURNAL Proc. Natl. Acad. Sci. U.S.A. 93 (11), 5291-5295 (1996)  
MEDLINE 96224276

REFERENCE 2 (bases 1 to 5180)

AUTHORS Cobb, M.H.

TITLE Direct Submission

JOURNAL Submitted (06-FEB-1996) Melanie H. Cobb, Department of  
Pharmacology, University of Texas Southwestern Medical Center at  
Dallas, 5323 Harry Hines Blvd., Dallas, TX 75235, USA

FEATURES  
source

Location/Qualifiers

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